

Assessment of Emotional Intelligence and Empathy in Dental Undergraduate Students in Pune: A cross sectional study.

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Aim:

Dental education in India has traditionally placed a greater emphasis on biomedical knowledge for dentists, with less emphasis on interpersonal skills and the ability to interact to patients. This study studied the emotional intelligence and empathy of undergraduate dental students, as well as their relationships with numerous parameters, in order to establish a baseline for future research in this field.

Methodology:

Third years, Final years and Interns of D Y Patil Dental School, Pune were given the BarOn Emotional Quotient-Inventory (BarOn EQ-i®) and the empathy formative questionnaire, as well as a socio demographic questionnaire. SPSS 20 was used to analyse the data.

Results:

The overall mean scores for dental students on emotional intelligence and empathy are significantly higher than those found in previous literature, indicating that dental students do appear to perform any better than the general population in terms of EQ. On the Appraisal of Emotions, Regulation of Emotions, Empathic Concern Scale, and Personal Distress Scale, women scored statistically significantly higher than men.

Conclusion:

EI skills, which are building blocks that may assist students and residents to gain competence, appear to be lacking in the current medical curriculum and training in Pune. In India, dental educators should search for ways to incorporate emotional intelligence into medical curricula, which will help to promote patient-centred care, patient satisfaction, and effective communication skills.

Keywords: Emotional Intelligence, Empathy, Gender, Dental Undergraduates, Paediatric Dentistry Rotation.

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I. Introduction

Emotional Intelligence (EI) is defined as "a set of capabilities (verbal and nonverbal) that enable a person to produce, detect, express, comprehend, and assess their own and others' emotions in order to guide thought and action that successfully copes with environmental demands and pressures." About a decade ago, Salovey and Mayer described this concept for the first time¹.

Low EI has been linked to deviant behaviour, alcohol and drug misuse, and poor relationships, whereas high EI has been linked to academic performance, social skills, more cooperative interpersonal connections, and the ability to cope with stressful conditions.

Emotional intelligence is a topic of increasing interest in medicine, and it is one of the non-cognitive traits that are thought to be desirable in future physicians in order to contribute to patient-centred care, patient satisfaction, and good communication skills².

Students whose writing reflected more emotional withdrawal and disengagement from the situation were later rated as having poorer specific and overall communication skills by standardised patients in a study in which medical students wrote about their emotions in response to a hypothetical traumatic dental event.

In at least one admissions research, EI was found to be useful in identifying "applicants' traits most congruent with a humanistic approach to medicine." EI has also been shown in research to be a possible component in reducing stress in healthcare students.

The issue in medical education is to recognise and understand the psychological elements that aid in the development of successful abilities, enabling for more effective curriculum to be developed³. EI training for healthcare personnel may increase leadership traits, communication skills, and burnout and stress prevention.

Students and residents may be able to gain competence by using EI abilities as building blocks. The successful measurement of EI in individuals is the first step in adopting an EI framework in dentistry.

The majority of studies on emotional intelligence in dentistry education have been undertaken in the industrialised world, and this subject in India is still being investigated⁴. The first step in developing an emotional intelligence-promoting curriculum for our country, with its distinct social, cultural, and religious landscape, may be to assess the emotional intelligence of our dental students.

II. Methodology:

In 2021, the study was done for a time duration of 2 months at D Y Patil Dental School in Pune. The study was approved by D Y Patil Dental School's Ethical Review Board. The study was open to all undergraduate students who treat patients. Before they filled out the questionnaire, the participants were given a written explanation of the study's goal and emotional intelligence, and informed consent was obtained. To promote participation, the survey was made anonymous. It was given to willing participants and collected by the data collection team as soon as it was finished.

The questionnaire was in English, and included the Emotional Intelligence Scale - BarOn Emotional Quotient-Inventory (BarOn EQ-i®) in addition to demographic information.

Based on over 20 years of research by Dr. Reuven Bar-On and tested on over 110,000 individuals worldwide, BarOn EQ-i® is the first measure of emotional intelligence

The BarOn EQ-i® has 133 items, four validity indices, and a complex correction factor, which results in scores for the following components:

- Interpersonal communication (Self-Regard, Emotional Self-Awareness, Assertiveness, Independence, and Self-Actualization)
- Interpersonal communication (Empathy, Social Responsibility, and Interpersonal Relationship)
- Stress Reduction (Stress Tolerance and Impulse Control)
- Flexibility (Reality Testing, Flexibility, and Problem Solving)
- Mood Scale for Everyone (Optimism and Happiness)

The BarOn EQ-i® can be used in a variety of situations, including clinical, educational, forensic, medical, business, human resources, and research. It can assess a client's general level of emotional intelligence, capacity for emotional health, and psychological well-being in psychodiagnostics. The findings can be used to identify areas that need more research, determine the overall need for therapy, set clear therapeutic goals, decide when to stop therapy, assess the effectiveness of psychological intervention, and assess the potential for success for those considering substance abuse rehabilitation.

Questionnaire was to be filled exclusively by professional students aged 21-27. Effective emotional and social functioning is indicated by a standard score of 90 to 110. A score of greater than 110 indicates that you have improved emotional and social abilities, whilst a score of less than 90 indicates that you need to work on improving those skills.

To assess the empathy an empathy formative questionnaire was used. Empathy permits pupils to relate to the thoughts and feelings of their peers in the setting of education. Empathic students are socially and self-conscious, as well as aware of their own talents and flaws. Empathy is a component of social and emotional learning, which has been found to increase students' academic achievement as well as their ability to learn for the rest of their lives. Empathy, along with social responsibility, was found to be one of the strongest predictors of college enrolment and graduation.

The Empathy Questionnaire is intended to assess a student's ability to demonstrate empathy in two key areas:

1. Make an attempt to comprehend others' contexts, sentiments, and actions.
2. Explain how you comprehend someone's particular situation.

The results of the Empathy Questionnaire can be used by undergraduate students. The results are shown on a 100-point scale to make them easier to understand. These numbers can be understood in the same way as grades are (e.g., 70-79 is a C). The results by vital component allow for in-depth analysis of relative strengths and areas for development. Descriptive and inferential statistical analyses were carried out in the present study. Results on continuous measurements were presented on Mean \pm SD and results on categorical measurement were presented in number (%). Level of significance was fixed at $p=0.05$ and any value less than or equal to 0.05 was considered to be statistically significant. Student t tests (two tailed, unpaired) was used to find the significance of study parameters on continuous scale between two groups. The Statistical software IBM SPSS statistics 20.0 (IBM Corporation, Armonk, NY, USA) was used for the analyses of the data and Microsoft word and Excel were used to generate graphs, tables etc.

Results

Table 1: Descriptive statistics (N=104)

Variables	Sub-groups	n	%
Year of study	Interns	53	51.0
	3rd and Final years	51	49.0
Gender	Male	29	27.9
	Female	75	72.1

Table 2: Comparison of emotional intelligence and empathy scores in terms of {Mean (SD)} among both the groups using unpaired t test

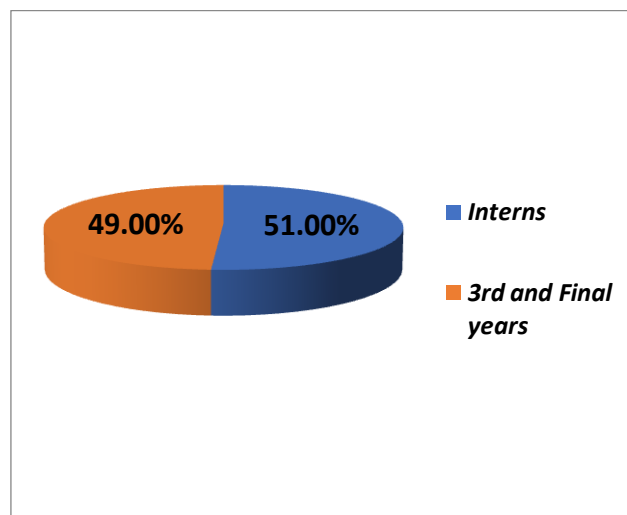
	Year of study	N	Mean	Std. Deviation	t value	P value
Emotional intelligence	Interns	53	105.11	14.966	0.261	0.795
	3rd and Final years	51	105.86	14.326		
Empathy	Interns	53	57.917	16.8242	0.827	0.0410
	3rd and Final years	51	55.365	14.5100		

Table 3: Comparison of emotional intelligence and empathy scores in terms of {Mean (SD)} among males and females using unpaired t test

	Gender	N	Mean	Std. Deviation	t value	P value
Emotional intelligence	Male	29	103.52	15.042	0.852	0.0396
	Female	75	106.24	14.442		
Empathy	Male	29	55.200	16.7717	0.590	0.0557
	Female	75	57.232	15.3573		

Figures

**Figure 1: Descriptive statistics (N=104)
Year of study**



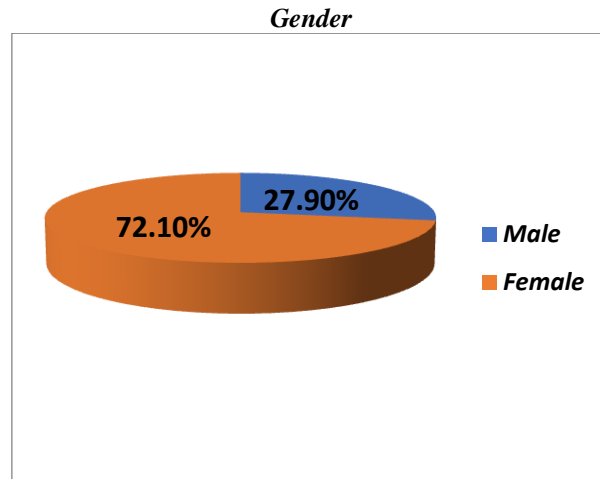
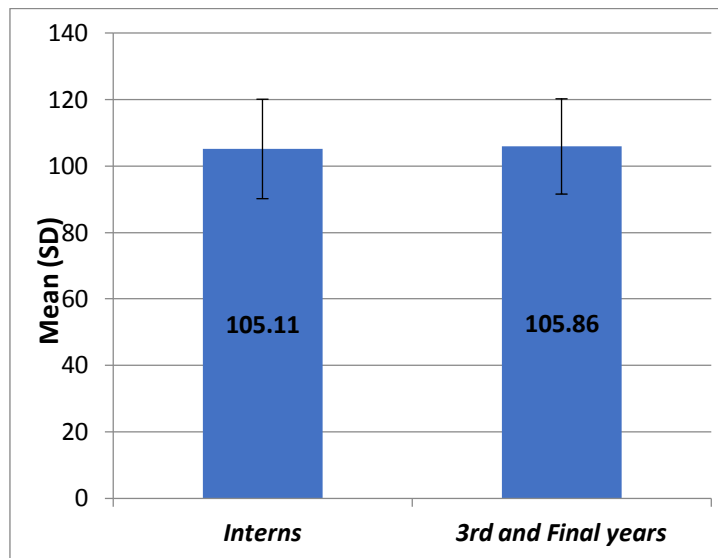


Figure 2: Comparison of emotional intelligence and empathy scores in terms of {Mean (SD)} among both the groups using unpaired t test

Emotional intelligence



Empathy

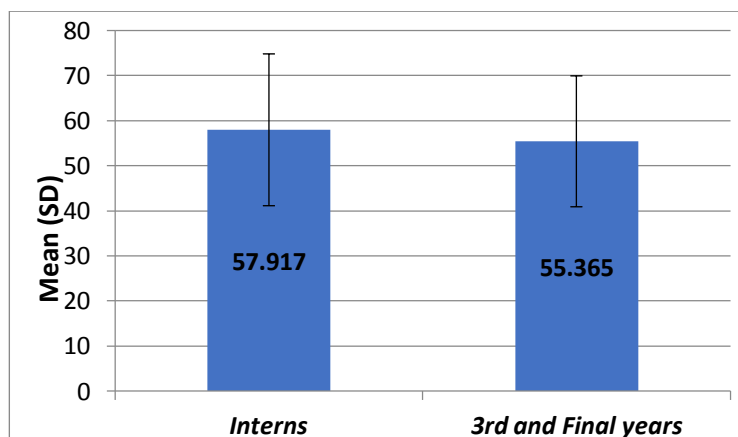
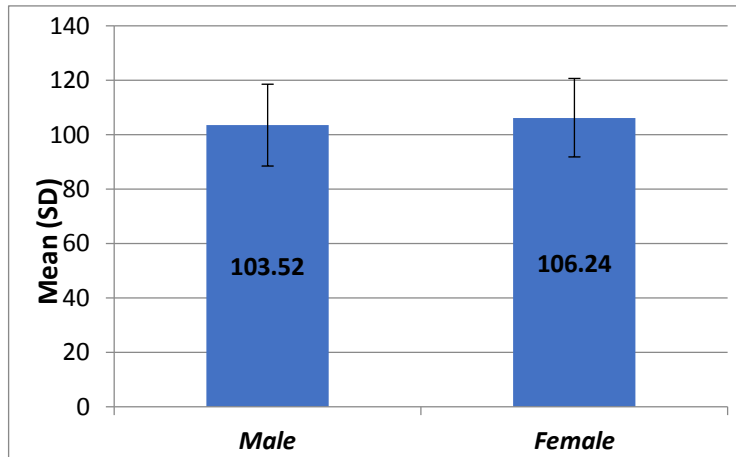
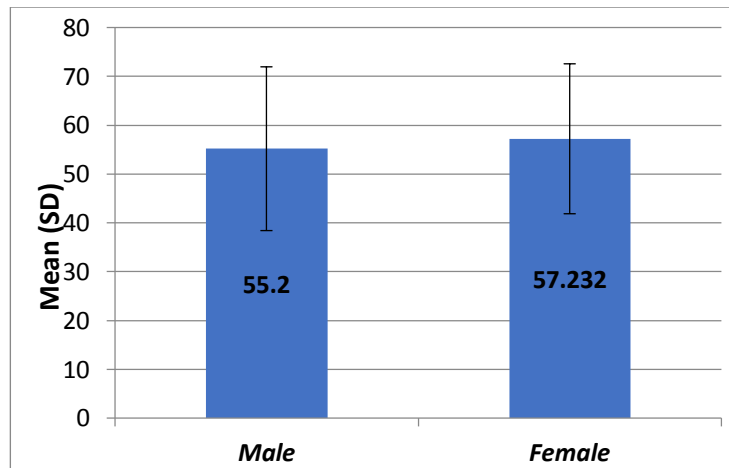


Figure 3: Comparison of emotional intelligence and empathy scores in terms of {Mean (SD)} among males and females using unpaired t test

Emotional intelligence



Empathy



III. Discussion:

Emotional Intelligence (EQ) is a fascinating and intriguing notion that looks to be important to patient-centred care in medicine⁴. Doctors should have empathy, be active listeners, be able to grasp diverse points of view, and be able to understand their own reactions as well as deal with stress appropriately, and practically all of this is related to the concept of emotional intelligence.

Total EI was essentially identical in both groups in interns and final/third year, implying that dental students in our sample have similar levels of gross emotional functioning⁵. This brings up two crucial points. The first is that dental students' total mean scores on emotional intelligence and empathy are slightly higher than those found in the literature, indicating that dental students do appear to perform higher than average in EQ, as is the case in IQ.

To say, our students mean scores of 105.3 do appear promising.

Although it is uncertain if the ratings represent substantial clinically relevant changes, data suggests that students with greater EQ do better in clinical skills. Wagner et al. discovered a small link between clinicians EI and patient satisfaction. The second, and probably more surprising, finding is that students' EI does not appear to rise with their dental school experience. Empathic care, attention to feelings, and mood repair were shown to be lower than at the baseline in a research of changes in emotional scores across undergraduate dental curriculum, whereas personal distress was found to be greater.

Unfortunately, modern dental education emphasises hard skills training and technical parts of medicine above soft skills such as interpersonal skills and the capacity to communicate to patients. The dental curriculum should

be changed to place a greater focus on interpersonal skills. It will also aid in the selection of applicants for dental school who have a high EQ.

In this study, we found statistically significant when comparing EI and empathy scores by gender, with a trend of women scoring slightly higher. During a previous study of the literature⁶, it was shown that females scored higher on EI in some studies. On the other hand, another study found that males have higher self-estimated EI than females, and only a few studies found no gender differences. One possible explanation for the results is cultural differences, as psychological qualities have been observed to differ between males and females from other cultures⁷.

Women are more sensitive to emotional impulses than men, which may explain their higher empathy and EI. Given the strong correlation between EI and desirable healthcare competence, it is critical to take actions to improve it, one of which is by exercising the skills that make up EI⁸.

Healthcare educators recognise that our students learn a great deal through "informal curriculum" in clinical rotations and lectures, and that the presence of positive role models aids in the process of increasing EI. We should also look into ways to incorporate mindfulness into our dental education to help produce emotionally competent doctors.

In India, EI research is still in its beginnings. Although, as far as we know, this is the first study of its kind in India, and it is significant, the study's findings should be viewed as mostly exploratory and in light of its limitations. The research is preliminary, and the sample size is limited. Due to a lack of resources, we used a cross-sectional strategy; nonetheless, a longitudinal design would have been more beneficial. Despite the fact that these measures have been used extensively in numerous research conducted around the world, we should consider the cultural bias in their application⁹. Although research has shown that self-reported measures correlate more strongly with personal and performance measures, it would be useful to compare EI using multiple means, such as trait and performance measurements, to predict objective performance ability¹⁰.

IV. Conclusions:

Finally, as the population's healthcare needs, expectations, and aspirations change around the world, including in India, so should dental education. Unfortunately, our current dental curriculum and training do not appear to be increasing EI. We feel that the first stage should be, students should evaluate and understand their own EI, which will help them recognise and appreciate the perspectives of patients and caregivers.

In India, dental educators should explore for ways to incorporate building blocks of emotional intelligence, it should be a part of our school's curriculum. The EI instrument can be used in conjunction with the admissions process to assess desired personal characteristics in prospective dental surgeons, which can then be nurtured during dental school¹¹. As we equip doctors to meet society's expectations in the twenty-first century, we must remember that nothing can replace a doctor's professionalism and skill, with EI and empathy playing an important role.

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